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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

MAILED

Application Number: 09/895,233

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Filing Date: June 29, 2001

Appellant(s): CRADDOCK ET AL.

Technology Center 2100

Cathrine K. Kinslow
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 26, 2005.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is

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contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1, 5, 8, 9, 13, 17 and 20-22 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

The rejection of claims 2-4, 6-7, 14-15, 18-19, and 23-30 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(9) *Prior Art of Record*

6,694,361	Shah et al.	2-2004
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6,704,812	Bakke et al.	3-2004
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(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 5, 8, 13, 17, and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Shah et al. (U.S. Patent No. 6,694,361).
2. In regard to claims 1, 13 and 22, Shah disclosed a *method [and system and computer program product in a computer readable medium] for end node partitioning for a physical element, comprising the steps of:*
 - a. *Selecting a configuration of the physical element, said physical element including a plurality of ports; [Shah disclosed host-fabric adapter initialization and configuration and channel configuration. Shah, column 5, lines 48-50. Channel configuration would inherently have involved channel adapters in the Shah invention. Shah disclosed that channel adapters contained one or more subnet attachment points called ports. Shah, column 7, lines 43-45. Furthermore, any host-fabric adapter configuration would have inherently contained a plurality of ports because a connection between a host and the switching fabric was often a port.]*
 - b. *Probing one of said plurality of ports that is included within said physical element, wherein the port is probed with a subnet management packet by a subnet manager; [Shah, column 7, lines 27-34. Shah, column 8, lines 33-51. Shah disclosed management of ports on channel adapters by the subnet manager. Probing the port with a subnet management packet is inherent to port management by a subnet manager. In order to manage a port, the port status*

must be obtained by the port manager. This status is obtained through the probing of the ports in the system.]

c. *In response to determining that said physical element is a particular type of physical element, partitioning said physical element to provide a plurality of virtual representations of said physical element, each one of said plurality of virtual representations having a unique access control level; [Shah disclosed assigning multiple paths to a port. [Shah, column 8, lines 52-67.*

Each path provided different service levels.] and

d. *Partitioning said physical element by assigning a different local identifier to each one of said plurality of ports that is included within said physical element resulting in a configuration change of the physical element. [Shah, column 8, lines 37-56. Transitioning the ports through different states was a configuration change of the physical element.]*

3. In regard to claims 5 and 17, Shah disclosed *said physical element being one of a switch, a target channel adapter, and a host channel adapter.* [Shah detected ports when a host is plugged into the subnet. Shah stated that ports on all channel adapters are managed by the subnet manager. Standard switch hardware in the networking art also included the presence of ports in order to communicate with external devices such as channel adapters. Shah, column 8, lines 32-51]

4. In regard to claims 8 and 20, Shah disclosed *connecting one or more operating system images to at least one host channel adapter.* [Shah disclosed that the hardware was used to support asynchronous data transfers between memory regions on different systems. Shah did not explicitly state that operating system images are present on a channel adapter, but in order to interface with a system the presence of an operating system image was inherent to the hardware. Shah, column 6, lines 44-47.]

5. In regard to claims 9 and 21, Shah disclosed *the host channel adapter is a virtual host channel adapter.* [Shah disclosed use of virtual hardware in column 6, lines 44-47. Shah defined VI hardware as a virtual interface in column 6, line 26. Virtual hardware or VI hardware would have included a virtual host channel adapter.]

Claim Rejections - 35 USC § 103

6. Claims 2-4, 6-7, 14-15, 18-19, and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah as applied to claims 1, 13, and 22 above, and further in view of Bakke et al. (U.S. Patent No. 6,704,812).

7. Pertaining to claims 2, 14 and 23, Shah taught a method for end node partitioning as applied to claim 1. Shah failed to disclose selecting the configuration of the physical element included a static selection of the physical element and a dynamic selection of the physical element. Bakke taught static assignment at initialization [selecting the configuration] of pathways [physical element]. [column 2, lines 6-10]. Bakke also taught dynamic selection of the physical element [column 5, lines 24-29]. Motivation existed in the Bakke reference to statically and dynamically select physical elements without involving complications to the operating system of the host computer [Bakke, column 2, lines 42-44]. Express suggestion for this was found in Shah, column 1, lines 34-41. Therefore, it would have been obvious to one of ordinary skill in the networking art at the time of the invention to use static or dynamic configuration for selection of the physical element. Since it would have been obvious to use either static or dynamic configuration for selection of the physical element, it would have been obvious to one of ordinary skill in the art to use both statically and dynamically select physical elements as Bakke suggested with the end node partitioning method suggested by Shah for the reason of giving more flexibility of operation of the device with or without necessary administrative controls.

8. Pertaining to claims 3, 15 and 24, Shah in view of Bakke taught a method for end node partitioning as applied to claim 2. Shah failed to disclose in response to a static selection of the physical element, modifying the configuration of the physical element through at least one of a fabric initialization and a reboot of a node associated with the port. Bakke taught a state resetter that could reset [reboot] paths [nodes] into a state to accept the incoming commands/data. [column 5, lines 51-54]. Motivation existed to reboot nodes in the end node partitioning method so a failed path can be recovered for use [column 2, lines 40-42]. It would have been obvious to one of ordinary skill in the art at the time of the

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invention to combine Bakke's ability to reboot paths with Shah and Bakke's method for end node partitioning with static and dynamic configuration.

9. Pertaining to claim 4 and 25, Shah in view of Bakke taught a method for end node partitioning as applied to claim 2. Shah failed to disclose in response to a dynamic selection of the physical element, modifying the configuration of the physical element through at least one of a fabric initialization and a reboot of a node associated with the port. Bakke taught a state resetter that could reset [reboot] paths [nodes] into a state to accept the incoming commands/data. [column 5, lines 51-54]. Motivation existed to reboot nodes in the end node partitioning method so a failed path could be recovered for use [column 2, lines 40-42]. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Bakke's ability to reboot paths with Shah and Bakke's method for end node portioning with static and dynamic configuration.

10. Pertaining to claims 6, 18 and 27, Shah taught a method for end node partitioning as applied to claim 1. Shah failed to disclose in response to a host channel adapter and a host node becoming operational, reporting the host channel adapters and host processor node as they became operational. Bakke taught the ability to report the host channel adapters and host processor node as they became operational [column 5, lines 33-35 described a redundancy manager with a detector of paths connected to the device, and column 5, lines 54-56 described the detector's recovery notifier to allow failed links that have been recovered [or added] to be activated]. Motivation existed to report host channel adapters that have become operational to the end node partitioning method in order to adapt to new devices and new physical paths without involving complications to the operating system of the host computer [Bakke, column 2, lines 42-44]. Express suggestion for this was found in Shah, column 1, lines 34-41. It would have been obvious to one of ordinary skill in the art to have reported host channel adapters that became operational to the method of end node partitioning suggested by Shah.

11. Pertaining to claims 7, 19 and 28, Shah taught a method for end node partitioning as applied to claim 1. Shah failed to disclose in response to removing a host channel adapter and a host node from operation, reporting the removal of the host channel adapter and the host node from operation. Bakke has taught the ability to have reported the removal of host channel adapters and host processor node

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[column 5, lines 33-35 described a redundancy manager with a detector of paths connected to the device, and column 5, lines 47-51 described the detector's ability to have notified the method if a path has failed [been removed]]. Motivation exists to have notified the end node partitioning method of a failed link so the method could have dynamically used alternate paths [Bakke, column 2, lines 39-42]. Express suggestion for this was found in Shah, column 1, lines 34-41. It would have been obvious to one of ordinary skill in the art to have combined Bakke's ability to report the removal of a host channel adapter/node to the end node partitioning method suggested by Shah and Bakke.

12. Pertaining to claim 29, Shah in view of Bakke has taught a computer program product for end node partitioning as applied to claim 23. Bakke has failed to disclose instructions for connecting one or more operating system images to at least one host channel adapter. Shah teaches connecting one or more operating system images to at least one host channel adapter, as previously stated in the rejections for claims 8 and 20. [column 6, lines 44-47, where "different systems" was "one or more operating system images"] Motivation existed for an end node partitioning product to have supported multiple systems as hardware and software were often used to support asynchronous data transfers between two memory regions, often on different systems [Shah, column 1, lines 21-23]. It would have been obvious to one of ordinary skill in the art to have allowed the computer program product suggested by Shah and Bakke to connect to different systems as suggested by Shah.

13. Pertaining to claim 30, Shah in view of Bakke has taught a computer program product for end node partitioning as applied to claim 29. Bakke failed to disclose wherein the host channel adapter was a virtual host channel adapter. Shah has taught wherein the host channel adapter was a virtual host channel adapter, as previously stated in the rejections for claims 9 and 21. [column 6, lines 44-47, where "VI hardware" was "virtual host channel adapter". VI was defined as "Virtual Interface" at column 6, line 26] Motivation existed to have used virtual host channel adapters with the end node partitioning computer program product in order to help manage external bus traffic that was becoming increasingly congested by utilizing devices with multiple ports. [Bakke, column 2, lines 1-6] It would have been obvious to one of ordinary skill in the art to utilize Shah's virtual host channel adapter with the computer program product suggested by Shah and Bakke.

(11) Response to Argument

Applicant's argument centered around the fact that the Examiner admitted to not placing weight on the word "virtual" in the claim language referring to "virtual representations", for example in claim 1. However, the Examiner has found no definition within Applicant's disclosure that defined what Applicant means by "virtual representation." The additional limitation of "virtual representations" could have been treated as a new matter rejection by the Examiner. However, the Examiner still contends that the Shah reference meets all aspects of claim group I without the additional new matter rejection being added.

Applicant has also chosen to argue the meaning of the word "virtual". The Examiner's definition from a "non-technical dictionary" is further supported by the Microsoft Computer Dictionary, Fifth Edition, page 553, which specifies that virtual is "of or pertaining to a device, service, or sensory input that is perceived to be what it is not in actuality, usually as more 'real' or concrete than it actually is." Applicant's arguments concerning the definition of "virtual" are leading away from the main argument of the prior art applied against the claims.

The Examiner has applied the broadest reasonable interpretation to the claim language.

The Examiner maintains that assigning an LID to a port as taught in Shah, column 8, lines 52-67, taught partitioning a physical element to provide virtual representations of the physical element as defined by Applicant's disclosure. "Multiple identification values (LIDs)" were assigned to ports. (Shah, column 2, lines 50-51) Each port was uniquely identified and addressed by use of a local ID (LID). (Shah, column 8, lines 42-46) A fabric-attached port was assigned multiple LIDs. (Shah, column 8, lines 52-55) Different service levels were supported. (Shah, column 8, lines 64-67). Applicant failed to define "access control levels" or "unique access control levels" within the specification. One of ordinary skill in the art would interpret "access control level" to be a service level.

Applicant argued that because of the Examiner's statement "While Shah does not explicitly teach probing the port with a subnet management packet, this function is well within the realm of port management by a subnet manager." that the rejection did not teach every element of the claims and therefore was not a 102 rejection. "Probing the port with a subnet manager" is *inherent* to "port

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management by a subnet manager". A subnet manager is required to access each port for information in order to operate. This was otherwise known in the art as probing a port or scanning a port.

In regard to Group II, Applicant has restated the arguments concerning partitioning virtual representations with access control levels that Applicant presented for Group I. The issue has already been addressed, and will not be restated for the sake of brevity of the legal record. Applicant's only remaining argument with regard to Group II was a perceived lack of motivation to combine the two references. In response to applicant's argument that there was no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the combination of Shah and Bakke was allowing adaptation to new devices without complications to the operating system of the computer as expressly shown in Bakke, column 2, lines 42-44 and expressly suggested in Shah, column 1, lines 34-41. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

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October 26, 2005

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